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ABSTRACT

This report provides a description of an innovative ECE program which uses a diagnostic-prescriptive approach. The program is based on a comprehensive developmental model in which cognitive growth proceeds through motor, perceptual, integrative, and symbolic phases. It is emphasized that the basic developmental processes must be assessed so that the program can provide growth in each of these areas. The diagnostic process begins when the children enter kindergarten. Initial screening focuses on perceptual coordination and progresses according to the degree of success attained by each child. Profiles are compiled and given to classroom teachers to be used in forming instructional programs. The educational process is designed to build independent working habits, and to this end learning centers and self instructional materials are utilized. Initial program objectives focused on the screening of 95% of all children entering school, demonstration of staff competence in reading profiles and forming learning strategies, and large scale implementation. Evidence from the evaluation effort indicates that the program is operating smoothly and effectively. The report includes a list of publications and materials ready for dissemination, a discussion of program costs, and guidelines for interested school districts on establishing similar programs. (DP)

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E.S.E.A. TITLE III PROJECT
Strategies in Early Childhood Education

I. Descriptive Data

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II. Project Description

A. Overview of Project

The maximum development of every child's potential has been one of the major goals of public education in the United States. This however has not proven to be an easy task. In striving to meet this goal educators have recognized the great importance of the early years of life in a person's total growth and development. Studies, related literature, and the

Federal Government's interest and emphasis on early childhood education became the motivating forces for a group of educators in Cooperative Educational Service Agency No. 13 to combine their efforts in developing a unique innovative approach to early childhood education.

The basic tenets of the program designed were that:

- 1) A child must have basic processes developed to a certain level before objectives, such as reading, etc., can be taught effectively and meaningfully. Failure to take into account developmental issues results in failure and/or nonmeaningful rote learning;
- 2) There must be an assessment of where the child is developmentally in terms of learning functions and stages;
- 3) Once assessment has been made, the educational program should provide growth in each of the areas so that the child advances, at his own rate, to the uppermost level.

The model used is similar in many respects to the one proposed by Beery (1968) with some minor variations. It provides a broad basis for the sequentialization of developmental skills built upon the premise that cognitive development proceeds through motor--perceptual--integrative--symbolic phases.

The assessment begins with children entering kindergarten. With some revisions it could easily provide assessment at

the three or four year old level, or even for a six year old entering first grade. Because of the age of the child and due to time considerations, the screening instrument begins with an assessment of all children at the perceptual coordination level. Assessment then proceeds upward or downward (or terminates), depending upon the child's success (or lack of it). Therefore, the child will either move downward until he meets success and/or upward until he meets difficulty. The results are then profiled and given to the classroom teachers who begin instruction at the appropriate level.

Prior to the instructional phase of the program each teacher must have transferred assessment information to an individual profile. This can be performed by an aide or clerical assistant.

Instruction begins informally with heavy emphasis on working independently, solving one's own problems, using equipment found in the room and creating an environment for selectivity and freedom. As children begin to master work independently, learning centers are set up. Children are directed by the teacher to a learning center, to an aide for assistance or assigned to the teacher for an instructional period. The activities found in the learning centers or the small group activities are selected as prescriptions from a prescription guide by the teacher and are matched to

each child's diagnosis. As activities within the centers are completed, children are allowed to select activities in other centers according to their interests.

Each objective in the program is behaviorally written to allow the teacher to post-test at any time through observation of the child's performance on an assigned activity. Should the child not be able to perform the activity (checking first to see why behavioral objective was not met), additional prescriptions are assigned. In the event the child successfully performs the objective he continues with the post-test of objectives until he is unable to perform the next task. Instruction then begins with the assignment of new appropriate prescriptions. This procedure is repeated with each child as he moves from level to level.

Due to the fact that the project is administered on a regional basis, a substantial number of students are involved. Approximately 1,000 students are screened each year prior to entry into kindergarten. Parents have played a major role in assisting with this phase of the project.

The training required for kindergarten and first grade teachers focuses on an understanding of the theoretical aspects of program, knowledge of the purpose and utilization of screening data, implementation of the program components, and organizing the classroom for independent learning.

No special consideration has been made in regard to facilities. The project has been operating in traditional self-contained classrooms as well as larger open-concept classrooms. Teachers have utilized many creative ideas in facilitating a learning environment. There appears to be little correlation between the success of the program and the quality of the facilities.

Self-instructional materials are a valuable tool when implementing this program. While cassette records, overhead projectors, etc. do much to promote program activities it is not imperative that they be available. The unusual application of the traditional materials and equipment found in any good kindergarten has been a highlight of the project. Teachers have been able to adapt many games and activities once thought of only as play type activities to learning situations. Teachers now look at balls, puzzles, ropes, etc. as learning tools rather than toys. Children complete educational prescriptions through the use of toys.

B. Objectives and Activities

The objectives of the project relate to children, parents and staff. The sequential progression through the program can be seen in the discussion of the objectives.

Since screening was the initial activity of the program, the specific objective was to have at least

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95% of the children entering school be screened and profiled for instructional programming. Each of the five districts set up a screening center, scheduled the individuals to be screened, and conducted the screening.

Enrollment forms were used to check the exact attendance and slightly over 95% of the total eligible children were screened. The children not able to attend this session were screened after school began. Both parents and teachers widely accepted this phase of the program.

At this time it became imperative that teachers understand the diagnostic-prescriptive approach and utilize the screening, prescription guide, and other project components. The objective being that the staff demonstrate their understanding of the diagnostic-prescriptive approach by listing a prescription from the guide appropriate to the profile of the individual in three of four situations. Each month five teachers were selected randomly and given pupil profiles for the purpose of selecting appropriate prescriptions. As the program emerged 14 of 15 project teachers were able to demonstrate an understanding and utilization of project components necessary for a diagnostic-prescriptive approach.

The next objective was to implement the diagnostic approach. Each project teacher needed to implement a diagnostic and prescriptive approach to meet the needs of

individual children as seen by examination of daily lesson plans and pupil records. Each month five project teachers were selected and asked to submit five examples of project implementation. In each sampling over 80% of the teachers were able to demonstrate they had implemented the diagnostic-prescriptive approach.

At this point individualization became a major focus and individualization via the prescriptive approach was to be observable as defined in at least 90% of the classrooms:

- a. Children were meeting their performance objective individually.
- b. Teacher and aide were freely moving from one child to another observing, assisting, etc.
- c. Learning centers in at least two areas (motoric, visual, auditory, language) were operative.
- d. A variety of learning material and equipment were to be used by students.

Each teacher was requested to schedule a variety of activities adaptable to these criteria at least 20 minutes each day.

The type of monitoring done in this case was by classroom observation and while in the initial observation the four criteria were visible in only approximately 30% of the instances observed, it soon moved up to 75% and now 100% of the project teachers are demonstrating this objective.

Parent participation in the program was initiated as parents became involved in the screening. They made up at least 50% of the screening team. A roster submitted to the project director gave evidence of this participation. In one district parents have taken upon themselves the entire responsibility of the screening program. Others have served as classroom volunteers and in one instance a group of parents volunteered to make educational games to be used in learning centers.

C. Evidence of Effectiveness

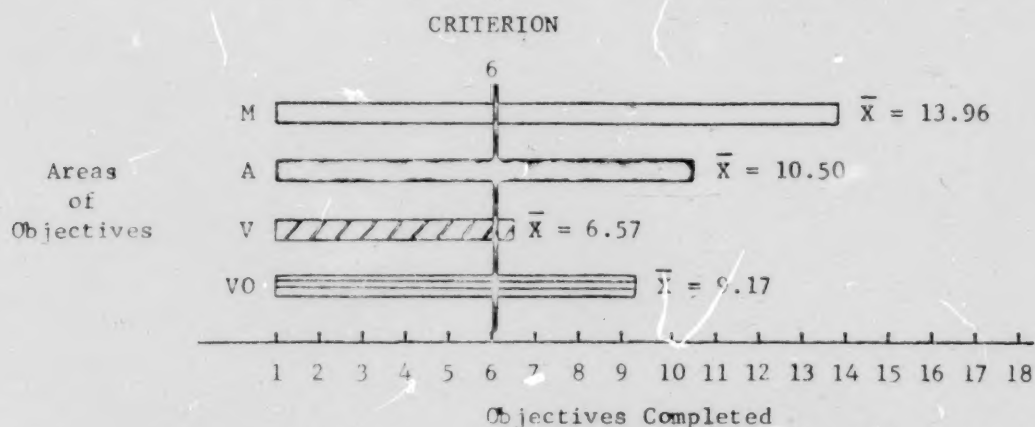
The evaluation strategy followed the EPIC Model (Evaluative Programs for Innovative Curriculum). This model requires objectives in measurable form, identification of instruments, and an acceptable level of performance. In addition, monitoring and setting a calendar of events were all included.

Evaluation is divided into two phases, the collection of data and treatment of data to determine effectiveness. Project staff in all cases gathered data and summarized whenever necessary. Data was analyzed by Dr. Robert Clasen of the University of Wisconsin Research and Development Center.

The programs effect on children has been impressive. When dealing with children individually, based upon their

learning pattern and level of development, most negative behaviors previously exhibited have disappeared. Some of the data still needs to be gathered, however, most objectives have been met.

Children were to show improvement in each of the four areas (motoric, auditory, visual, language) by moving ahead at least six objectives in each area as listed on chart of objectives. A random sample of children revealed children met the criterion in all areas. Some children progressed across levels, one child completed a total of 91 objectives.

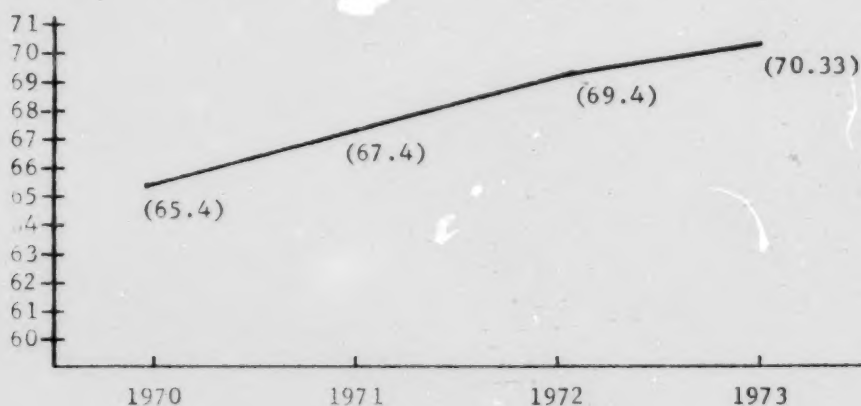


Mean number of objectives completed by children in Strategies project.

Children identified as having some motor difficulties in terms of coordination, agility, strength, flexibility, speed, balance, and endurance were to be able to perform these attributes of movement. To assess this aspect of the

project, children whose performance was rated as inadequate on the screening were retested at the end of the year. Ninety percent (90%) met the coordination test at the criterion level.

With respect to improved achievement, five classes were randomly selected and test results examined in 1970 (pre-project), 1971 (1st project year), 1972 (2nd project year) and in 1973 (3rd project year). Would there be evidence of improved achievement attributable to the project? Test results were obtained and evidence is indicated in the table below:



Graph of Total Metropolitan Test Score results for a random sample of males and females in five randomly selected project classrooms.

In comparison of project and nonproject students, five project teachers were randomly selected and five nonproject teachers. Five boys and girls were identified from each class. The Metropolitan test was administered. The project

students scored significantly better on the Metropolitan Readiness test than did nonproject students as indicated in the table below:

t Test Results Comparing
A Random Sample of Project and Non-Project Students'
Results on the Metropolitan Readiness Test.

<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>St. Deviation</u>	<u>t</u>	<u>n</u>
Project	50	69.94	10.92	3.17	<.05
Non-Project	50	61.58	14.86		

An additional outcome not measured in the project is teacher change. Comments teachers have made concerning the program have been most encouraging. The following quotes are supportive of this contention.

"I'm convinced this is the only way to teach kindergarten."

"The further we develop this program the better it looks--the children seem to respond more and more, even teachers are becoming more involved."

"Children are very helpful to each other and are making decisions."

A locally developed screening instrument was developed and field tested for two years prior to its final revision. The State of Wisconsin Testing Services assisted in treating the data to obtain validity and reliability.

D. Cost

The project has been field tested and revised to the point where no additional costs for development of materials are needed, however, staff development is vital to program success. The pre-service and inservice needs can be completed in about eight sessions costing about \$400.

In addition to staff development, which can also be considered a start up cost, materials needed at the outset of the project are the screening materials, chart of performance objectives, record chart and prescription guide. These materials and a few added supplies combined with materials most classrooms already have available can be obtained at approximately \$1.00 per pupil.

E. Publications and Materials

Several items have been developed through the project and are available for dissemination.

1. Criterion referenced screening instrument

Test manual	\$2.00
Pupil Editions	.40
2. Individualization: A Prescription Guide for Learning Centers in Early Childhood Education. \$3.95
3. Chart: Sequence of Performance Objectives .75
4. Chart: Pupil Record .75

F. Exportability Factors

School districts interested in the adoption of the project need to consider the following procedures:

1. A theoretical presentation on the background and development of the learning model.
2. A commitment by teachers and administrators to individualize instruction.
3. Secure materials and study the intricate relationship of the screening instrument to the chart of objectives, to the prescription guide and record system.
4. An organization plan for the classroom.
5. Opportunities through inservice for implementing a learning center approach.
6. A monitoring system for the purpose of determining progress.